

PATHWAYS

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ANNOUNCING! THE ARRIVAL OF THE TEACHERS' GUIDE

Many people today are concerned about what it means to be human, along with a current interest in technology, economy, and materialism. As one young teacher with a well-known school put it, "I have a Doctorate in Education. When I began work, I thought my problems were going to be academic and educational in nature. But I found they are not, they are essentially '**people**' problems".

In essence, this is found in all walks of life, yet, when this influences education, drastic losses emerge, in the form of depletion of human resources. This ultimately defeats the purpose of education.

"THE FUTURE SCHOOL - STRATEGIES FOR THE CLASSROOM", by the Educational Planning Group, has given a genuinely new concept of keeping alive the joy & fun in the classrooms. This is an invitation to the teachers of the children b/w 3 years & 6 years of age to empower themselves in the classrooms through everyday opportuni-

ties and experiences - both incidental and planned.

This work has a detailed curriculum for pre-schoolers, based on the underlying belief that permanent results and goals of education in the classroom would be best achieved when the needs, interests, abilities and potentials of the children are considered before planning and implementing days' routine.

In essence this **TAO** (how things happen) of early childhood education is a pathway to reduce the present day "crime and violence" against children b/w 3 years and 6 years.

This would be due for release for the teachers use during the new academic session during July '95.

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*If your life works, you influence your family,
 If your family works, your family influences the community,
 If your community works, your community influences the nation,
 If your nation works, your nation influences the world,
 If your world works, the ripple effect spreads through out the cosmos!*

"MOVING" EDUCATION

PART II

(B) ARITHMETIC/MATHEMATICS

(a) PRE-MATH CONCEPTS

(i) Big and Small.

1. Look at the two pictures I'm showing you. First, make the shape of the object that is big, then make the shape of the object that is small.

(ii) Long and Short.

2. Take long, giant steps across the room. Then try, short steps coming back the other way.

(iii) Wide and Narrow.

3. Try making some roads with our benches as boundaries. First make some roads narrow and some wide. Move between the desks. When you reach a narrow road, you make a narrow shape to fit in, while you reach a wide road, you must make a wide shape.

(iv) Few and Many.

4. Hold up many fingers. Then hold up just a few. Touch many body parts to the floor. Touch just a few parts to the floor. Take many hops forward. Try only a few hops backward.

(v) Tall and Short.

- 5(a) Move to this rhyme -

I'm tall
I'm short
I'm very very tall
I'm very very short
Sometime I'm tall
Sometime I'm short!
now guess what I'm ! ?

- b. Name some animals that move on to the ground and those which are tall and which are short? Lets' try making the shape of a tall animal first and then the short animal. Make your animal move around the room.

(vi) In front of, behind, middle, under, above, below, through.

6. We shall play "Simon says". Listen carefully to what Simon is saying and do accordingly "go over the first rope and then under the second rope. Go through the chairs and around the desk. Go behind the wastebasket and in front of the teachers' table. Move beside the bulletin board, until you come to the door.

(b) NUMBERS

7. Make the shape of the number that tells you how old you are?

8. Try to make a 9 with your hands, arms, legs, one arms and one leg, two legs and an arm?....

9. What numbers can you make with a partner - what numbers can you make with three people, 4, 8.....Can the whole class together make one giant number between 1 and 5?

10. Try making a 8 sitting down, standing up.

11. Can your number twist? Turn? Push, pull, stretch, bend, punch? Try to do this - stay in your number shape and do all those non-locomotor movements.

12. Let's make number kites. Turn your body into the shape of your favourite number. Now allow the wind to catch your number kite and fly it through the air. Imagine the wind becomes stronger and stronger. As you are moving along the wind, try to keep your number shape. Now the shape is dying down. You are falling slowly back to the ground until you land gently on the grass. Are you still in the shape your number?

13. Find a partner & trace a number on your partner's back. Can your partner guess the number you traced? Now let your partner trace a number on your back.

14. Bounce the ball in the shape of a 4. Try rolling the ball in the shape of a 2. Toss and catch the ball while you draw the number 6 on the floor with your feet, with your heel, with your toe and with your hand.

15. Make the shape of any number with your skipping rope and walk along the rope, tracing the number you made. Try tracing the number now while running, crawling, sliding, hopping, walking backwards.

(c) COUNTING

16. I shall call out numbers. Put the same number of body parts on the floor as the number I call out. When I say 2, you should touch two body parts to the floor.
17. As I clap my hands, you shall count the claps. When I finish, make the shape of the last number you counted.
18. We shall play an echo game. Someone will make a sound - like clapping, banging, clicking, bouncing, etc. Count the number of sounds the person makes, then repeat the same number of sounds just like an echo. Keep in time with your friends as you repeat the sounds.
19. The teacher makes a large cardboard grid with numbers on it. Alternatively, a grid can be drawn on the floor or wall, with numbers on them. A spinner is made with pictures containing different numbers of objects in the Roman numerals on the grid. (fig. 1). This game is known as the "Dhamaka Spinner". One student will be the spinner. What ever picture the spinner points on, one child has to count the number of objects and find the matching number on the grid. Then, put a body part on that number and stay there. Each time it would be his turn, he would put another body part on the numeral of his spin. Whenever he goes wrong, it would be the turn for another player.



(fig.1)

20. One child should pick a number b/w 1 & 20. A space'd be selected in the room to stand. As we count 16, move away from the space and then go back to your space in the time it take us to count the number. Try to get back to exactly the same space just as we say 16. Different kinds of movements, directions and speeds could be tried.

21. I shall write a number on the board. Skip as many times as the number names/ bounce the ball.

(d) SETS

22. How many dogs do you see in this set? Make that number with your body. How many biscuits are there? Make that number with your body. Are there as many dogs as the biscuits? Could each dog have a biscuit? If you think every dog could have a biscuit, make the shape of the biscuit. If you do not think there are enough biscuits for the dogs, make the shape of a sad dog.
23. I need two people who can make the shape of a ball. I need two people to become rabbits. I need two people to make the shape of chairs. Now one ball, one rabbit and one chair would go to that corner. Tell me if these sets match. Are the same objects in each set? These are equal sets. (Teacher can change the order of the objects so that one set consists of a ball, rabbit and chair and the other set has a chair, ball and rabbit). Now tell me whether these two sets are equal? Do they still have the same number the same objects as each other? Lets' get into groups and make other sets.
24. I want a leader and give the class a set of movement instructions. The leader has to list out a set of movement instructions for the class. When you've listed all, you end by saying, "ho!" The class'd perform all the instructions in order and then make the shape of the number of instructions in the set. For e.g. "skip on a low level, walk on a medium level, push on a high level, and go!" The class'd then perform all these and finally make the shape of the number 3. (The teacher can pick a new leader to give a set of different instructions based on direction, speed, position, etc.)

(e) OPERATIONS - ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION.

25. "I'd like one of you to come to the front of the room and stand." The

teacher then asks the rest of the class. "How many people do you see standing?" "One" - Another person'd be asked to come up and stand next to the first. "How many people do you see now?" "Two" - One person plus one more person equals two people." "Now one of you sit down. How many are left? Two people minus one person equals one person."

26. I shall put some even and odd problems on the board like,

$$E + O =$$

$$E + E =$$

$$O + O =$$

$$E - E =$$

$$O - O =$$

$$O \times O =$$

$$- \times E = E$$

$$E \times O =$$

$$O \div O =$$

$$E \div O =$$

$$E \div E =$$

If the answer is even, make the letter E with your body. If the answer is odd, make an O with your body.

Variations : - Instead of letters, the teacher could ask for actions - using direction, force, speed, etc.

27. Every student is given a number (sum or difference or product). If adding, start with five and run consecutively as far as needed. If subtracting, start with one. If multiplying use products as 4, 8, 12, 16, 20, etc. The first person to start taps his knees, claps his hands, clicks right fingers and calls out a number and clicks left fingers and calls out a number. The person whose number is the sum, for e.g. of those two numbers picks up the rhythm and gives two new numbers. We've to try to play without missing a beat. For e.g. the game'd go as :- (addition) Tap, clap, snap 2, snaps 4. Then number 6 would tap, clap, snaps 8, snap 7, and number 15'd pick up the rhythm. For subtraction, the rule'd be to call out the larger number first.

28. Children form a circle and count off by 5s' starting with 5, i.e., 5, 6, 7, 8, 9; 5, 6, 7, 8, 9; and so on). I shall

call out a problem. Everyone whose number is the answer, run around the circle & try to be the first person. The problem could be $3 + 4 = 2$; $16 \div 8 = 4$; $2 \times 5 = 1 \times 3$, and so on.

29. We shall play, "Who am I?" I'll write mathematical question on the board and you show me the answer with a body shape. For e.g. :-

I am 1 more than 5;

I am 4 tens and 5 tens;

I am less than 6 and greater than 2;

I am $1/4$ of 2 and 4, etc.

30. Can you show me with body, number, shapes or letters. For e.g. of the following equation :-

$$[a + (b + c) = (a + b) + c, a \times (b \times c) = (a \times b) \times c] \text{ or } [a + b = b + a, a \times b = b \times a], [a \times (b + c) = (a \times b) + (a \times c)]?$$

31. Start on zero on the number line. I shall give commands to follow, like "Hop three 2s", "walk two 6s", crawl five 3s". When you reach the answer, make the shape of the number you landed on.

(f) MEASUREMENTS

32. Let us pretend we are clocks. Clocks mark time in three ways. Can you name the three ways? (Seconds, minutes, hours). Show me a clock that shows seconds. How'd this clock move? You can move your whole body or body parts. Show me a clock showing hours move? Show me a clock marked with minutes only. Tell me how was each clock different?

33. One of you'd stand up and be a clock. Show the class 4.00' O clock, using arms and legs. Can you make one body part shorter than the other so that we can tell the hours hand from the minute hand?

34. Answer my questions by making letter shapes or number shapes. You may look at the calendar and answer -
What day of the week was March 25?
What day of the week was March 29?
How many days are in b/w? What is the

date before 6th, after 6th? How many days were in the whole month? How many days were in the first week? How many Mondays were there? How many Fridays?

35. The class'd be divided into small groups. Each group'd think of famous date or holiday. Make that date with number shapes. The rest of us shall try to guess the date and tell why it is famous. Can you make a second date on a different level?

36. Lets' measure the room, in people. How many people lying down head to toe can fit in our room? How wide is the room in people standing arms - width apart? Do you think we would get the same number if we used adults instead of children? Why?

37. Through movement show me what is meant by height, width, length, perimeter, circumference, diameter?

38. Answer my questions with number shapes. How many inches in a foot? How many feet in a yard? How many inches in a yard...

39. Pretend you are picking up a heavy, heavy rock. What does your body do? What happens to your muscles? Are all your body parts working or only a few? Are your body parts close together or apart? Now pretend you are picking up a leaf - and observe what happens to your body.

40. For the riddles I ask, give me your answer making the shape of the answer with your body -
- which weighs more, a kilo of feathers or 600 gms of rocks?
- which weighs the least, 300 gms of sugar cubes or one kilo of biscuits?

41. How'd you move if you weighed 500 kgs. Could you jump, skip, hop or leap? How'd you do these movements if you could? Do you get very far off the ground? Why? Now show me how a very thin person moves. What difference would you find?

42. Stand back to back. One of you bend forward with your back slanting. The

other person'd relax and let his friend hold this weight. The person leaning should feel as if he is leaning on a slanting board. Now the bending partner could slowly straighten up and the leaning partner'd bend forward slowly. The backs should be glued together and each should feel the movement of weight shift. Is there a movement when neither of you are holding weight?

43. I shall put two pictures on the board and write the price under each item. You shall make the shape of the item in the picture that costs the most.

44. Lets' divide the body into thirds, armpits on up is 1/3rd, armpits to hips is another third, and hips to toes is the last third. Can you bend 1/3rd of your body. Can you stretch 1/3rd? Can you do all those movements at one time with each third?

45. Answer these questions by hopping the correct number of times :
1/3 of 15 is?
1/4 of 8 is?
2/3 of 18 is?

(g) Volume, Pitch

46. Can you move softly when you hear the loud beats and loudly when you hear the soft beats?

47. I shall play a music with high pitched notes and music with low pitched notes. Listen to each piece and move the way the music makes you feel. When both are over, we shall discuss your movements.

48. I shall play two series of notes. Just listen to the music. When finished, make a quick movement if the second series was faster than the first. Make a slow movement if the second series was slower than the first.

49. I shall play a record at three different speeds. Listen to the music and try to match your movements to the tempo - when you think the music is fast, say "fast" as you are moving. Say "slow" for the music that is slow and say "medium" for the music that is not too

slow or too fast.

50. I shall play several short pieces of music. Move the way the music makes you feel. Listen to the volume, pitch and tempo. Think of how they are affecting you. We shall discuss the music and your movements and feelings after I have finished all the pieces of music. (Here the teacher plays four different pieces of music for about 30 seconds, using the combinations as high pitch and fast speed; low pitch, loud volume and slow speed; low pitch, soft volume, and fast tempo, and so on. Questions like - how did this piece make you feel? How did the pitch, volume and speed

affect your movement? What were you thinking of as you moved?

There are scores of similar possibilities for "embodiment" and "integrating" maths with language, music, story. So also, these are ways and means for the teachers of mathematics, language, social studies, music, science and physical exercises, to work together in order to reach the theoretical and articulate goal of education - **ALL ROUND HARMONIOUS DEVELOPMENT!**

We shall, in the next issue of **PATHWAYS**, attempt to provide possibilities to embody similar and creative experiences with **SCIENCE**.....

DO I TRUST YOU?

As teachers, we all strive to fulfill the objectives of education. Most of us are able to achieve this only partially. To get successful results on this, one of the prime and crucial requirements is to develop a relationship with every student in the class, and with the class as a whole. In order to develop this relationship, be it with students or colleagues, we need to disclose ourselves, so that they get to know us, i.e., **self-disclosure**. This would involve being aware of self and accepting ourselves. This would also frequently involve taking the risk of rejection and ridicule, in addition to losing our "status/authority" of the teacher!

Disclosing self in a meaningful way would mean **trusting the other person**, so that his/her responses would not hurt our feelings or make us feel rejected.

Therefore, one important factor in building a closer relationship is our willingness to risk being rejected. When we decide to take such a risk, our trust in the other person is of central importance. In other words, we must consciously learn to create a climate that would reduce our own and the other person's fear of betrayal and rejection and promote the hope of acceptance, support and confirmation.

Well,.... then what is trust?

Indeed, one of the most common word

in our vocabulary, yet a complex concept, difficult to concretise and define!

Let's check some of our classroom behaviours, which would give us an idea of whether we are trusting or trustworthy.

Given (on pg. 15) is a series of statements about our behaviour in a classroom. We have to place/describe ourselves as accurately as possible, on the given scale of 1 - 7, where, 1 would be never, and 7 would be always. There are no right or wrong answers to these.

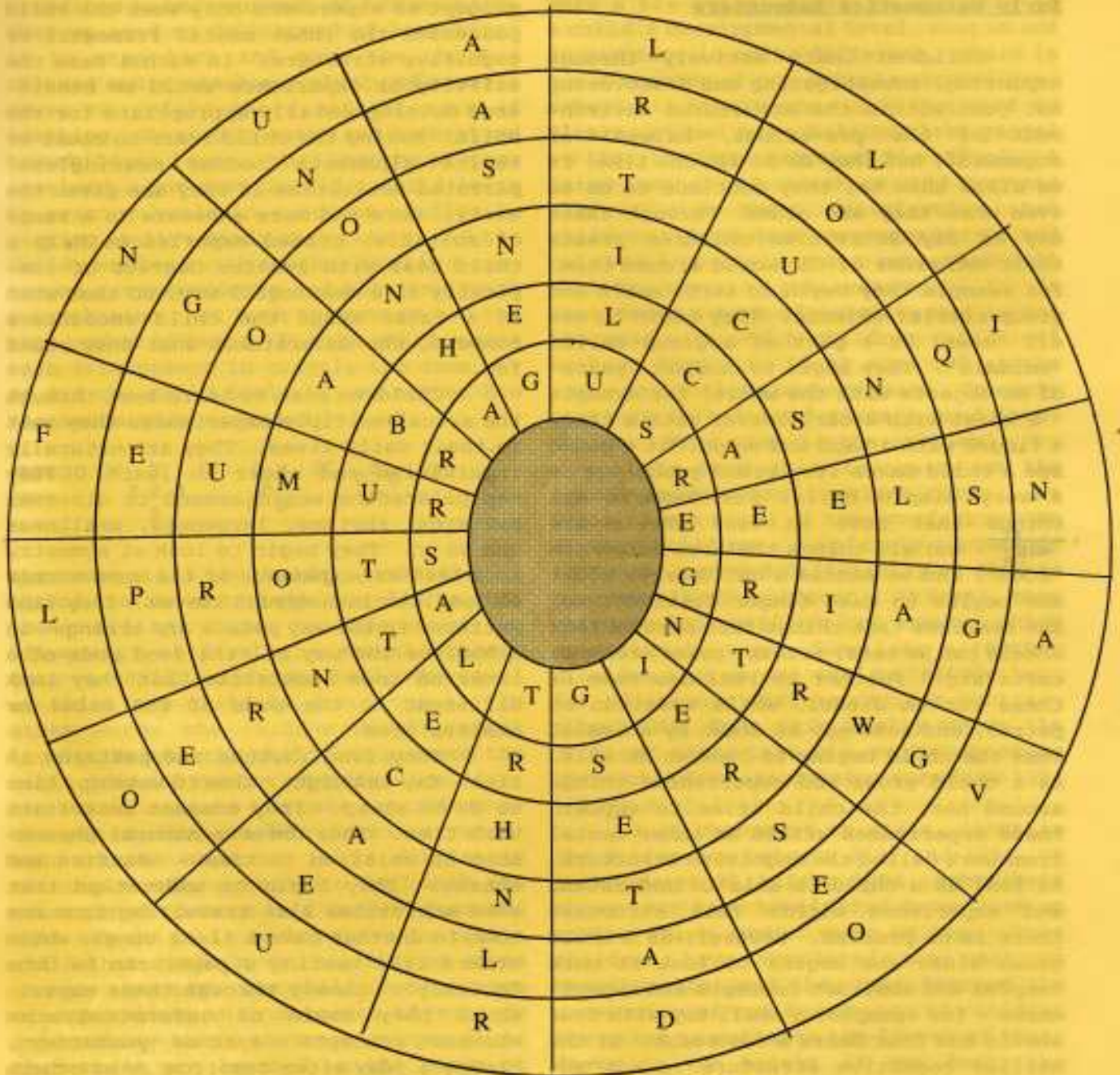
For every statement answered, we give ourselves the same score as our response. For e.g. if our response to the first behavioural statement is 3, our score also would be 3. For statements 5 and 6 scores would be reversed. If our total score is 21 or over, you are a trusting person. If not, we have to primarily work on these behaviours, which would automatically enable us to help our group of children reach their optimum.

P.N.: This self-evaluation on the behaviour of being trustworthy is a perspective on this concept. Therefore, responses and scores are to be taken as guides for enhancing the areas of sharing and acceptance, in order to help us trust others. This, in turn would enable us to initiate, develop and maintain a qualitative relationship with every person, making life richer and more meaningful.

.....contd. on p.15

LET'S TRY BEING A BAKER TODAY !

Before beginning to bake a cake, you have to move from one square to another - either up / down / forward / backward only to find out what we need to bake the cake!



Bakerman Bakerman, I shall bake a cake, for you and for me !



GETTING READY TO TACKLE NUMBERS

Mrs. Keerti Jayaram

Early Mathematics Encounters

Children learn actively through exploring, investigating and discovering not just within the structured environment of the pre-school, balwadi or anganwadi, but they do so all the time. If we allow them to, they continue to do so even when they are older. Through their day to day activities children create their own order of the world around them. For example they begin to sort, match and group similar objects. They begin to see all 'cows' as a part of a group called 'animals'. They begin to connect 'parts' of an objects with the whole; for example - a wheel with a car, leaves with a tree, a finger with a hand and so on. At a young age a child makes very broad groupings on a very simple basis. For example all things that move on four wheels are 'cars' and all things that are eaten are 'food', and so on. As a child grows older she begins to make finer distinctions. She realises that things that move on four wheels can be cars, trucks, buses, tempos, carts etc. Further she realises some of these run on diesel, while some run on petrol, and some may be drawn by animals. Thus the child begins to look at details. As a child grows and experiences things around her, the child tries to explain these experiences within an inner mental framework called the cognitive structure. As long as a child is able to understand and experience within this structure there is no problem. However, as a child grows older she begins to look at more complex and abstract concepts and experiences - for example, a small toy with four wheels and four doors & two seats. If the earlier cognitive structure is not adequate or suitable, the child is compelled to modify it, so that she can accommodate more complex experiences. As a child grows and progresses intellectually the child grows through stages which differ both qualitatively and quantitatively in terms of the child's ability to process information. It is important to realise that a child can grasp a particular

concept or experience only when the child possesses the inner mental framework or cognitive structure. In such a case the activity or experience would be considered developmentally appropriate for the child. Making the child learn to count or recite alphabets become meaningless, parroted activities if they are given too early. More and more exposure to a range of suitable, graded experiences help a child deal with greater degrees of complexity in a meaningful way, so that when at a later stage the child encounters numbers, she understands what they stand for.

Children seem to learn best through the actual multiple-experiences they meet in their daily lives. They are naturally inquisitive and eager to learn. They manipulate the world around to discover patterns, rhythms, largeness, smallness and so on. They begin to look at symmetry in a leaf arrangement, or the same number of leaflets in compound leaves. They find patterns in the way petals are arranged in a bud, or the way all the seed pods of a tamarind tree look alike, but they look different to the pods of the babul or amaltas tree.

They find rhythms and patterns in time - day and night, time to wake up, time to go to sleep. They connect activities with time. They observe natural phenomenon in relation to time - sunrise and sunset. They begin to understand that some activities like travelling from one town to another take a 'long time', while others like tearing a paper can be done 'quickly'. Slowly through these experiences they begin to understand more abstract concepts - such as 'yesterday', 'today', 'day after tomorrow', or others like 'one minute' or 'one hour'. They learn about 'heavier' and 'lighter' when they see the shopkeeper weighing things. They learn about 'more' and 'less'. Very quickly they learn about money. They know exactly which 'rediwallah' will give them more peanuts for 50p or whether they will get more peanuts or channa for 50p. They begin to make complicated calculations in

their daily lives without even realising that they are dealing with mathematics.

How Children Learn

Each child arrives at these understandings in her own ways, at her own pace. What we need to do instead of 'teaching' is to step back and give the child a relaxed environment and plenty of experiences to unfold their natural ways of learning. We need to watch and understand how children learn. What was the process involved. For example did a child learn to arrange beads in a groups of five by picking up five beads each time or did the child each bead with another bead in a one-to-one correspondence and then arrive at a conclusion that both the groups had the same number of beads. Did the child repeat each arrangement in exactly the same way or did the child feel that no matter how the beads were arranged -

00000 or $\begin{matrix} 0 & & 0 \\ 0 & 0 & 0 \\ 0 & & \end{matrix}$ or $\begin{matrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{matrix}$ or $\begin{matrix} 0 & 0 & 0 \\ 0 & 0 & \\ 0 & 0 & \end{matrix}$ or $\begin{matrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{matrix}$

they were still five beads. Although each one of the above activities tells us that the child has begun to understand the 'fiveness' of five, the actual process that the child undergoes tells the level at which the child is functioning. In other words the child's developmental level. Unless the child has grasped the basic idea of number conservation (i.e. the number remains the same regardless of changes in size, shape, colour or arrangement of the objects) it is completely meaningless for a child to deal with the counting of numbers in a series, just the same way as it is meaningless to tell a child that six is more than five or seven is more than six. The child needs a range of experiences with concrete objects to internalise these abstract concepts, so that these are learned on the basis of sound understanding and not rote learning.

The Need For Number Readiness At the Pre-School Level

Providing meaningful and graded experiences and learning opportunities is important at each stage until the child develops into an abstract thinker. These

experiences, however, become crucial at the pre-school stage - which forms the basis of all future learning. Looking around us we see quite a different picture. While educationists and policy makers have been stressing the need to make a pre-school programme suitable to a child's developmental level, what we see in practice is quite different. There is a mushrooming of pre-schools are pre-pre-schools. Little ones now trot off to 'learn' at two and a half or three years, so that they are prepared for school. A large number of teachers and parents express with great satisfaction that children 'these days' are very bright and quick and an early start puts them well on the way to achievement. It is considered a mark of intelligence to see the ease with which children rattle off numbers from 1 to 50 or even 100 at the early age of three or four years. An early start it is believed gives a good foundation. What then is the problem?

Lets move up a few years on the school ladder, say to class three. We begin to see signs of some confusion. An average child gets completely thrown off if a sum is worded differently to that in his book. 'Word problems!', Oh dear!, many children look baffled, not knowing which operation to use. Sometimes a teacher provides clue words - 'sum' or 'altogether' for addition, 'difference' for subtraction. But does this really solve the problem? Let's take an example. By class three children are solving sums like $3094 - 2131 = \underline{\quad}$?

Just change it to state, 'what is the difference between 2131 and 3094, or 'take away' 2131 from 3094; experience shows that many bewildered faces look up asking which number goes on top. Once children have completed the unit on measurements, and they have learned the conversion of various units, if children are asked to estimate the length of their desks or the height of the door, the answers are often completely mind boggling. These are just a few examples of the confusion maths has generated. There are many more such examples.

Number Readiness

Children need to go through several experiences of one-to-one correspon-

dence, matching and then counting to really internalize the 'numberness' of a number. Similarly they need several experiences of progression - such as one more than, two more than, and so on. They also need experiences of grouping and classifying, of seriating i.e. arranging objects in a gradation either on the basis of size or number or colour (i.e. darkest to lightest, or vice versa). Such activities help a child to internalize what a series of numbers in progression really mean. They need to make number combinations, to group, to take away, to realise for themselves what numbers represent. They need to make number combinations, to group, to take away, to realise for themselves that four is one less than five, that three and one together make four and that four can be made in several ways. They add, they take away, and thus work out their own number facts in their own way, at their own pace - provided they are given the experiences in many different ways.

Children need to go through several experiences of the kind that have been illustrated above. They need to familiarise themselves with the language of mathematics. Carefully planned experiences help them to understand a range of 'pre-number' concepts.

Some of these are :-

- a) **Concepts related to quantitative dimensions** i.e. big-small-same as, thin-fat-same as, far-near-same as, heavy-light-same as, tall-short-same as, and so on.
- b) **Concepts related to space location** i.e. in-out, here-there, from-to, before-after, first-last-in-between.
- c) **Conservation** i.e. the understanding of the invariance of number, mass or volume of an object or substance regardless of change in shape or arrangement.
- d) **Classification** i.e. the understanding which enables a child to group objects, initially on the basis of a single attribute, such as colour, shape or size; and later as a child begins to deal with greater complexity she be-

gins to classify on the basis of two or three attributes at a time, for example, small red circles or small water animals.

- e) **Sequential thinking** i.e. the ability to recall events in order or to be able to repeat a pattern.
- f) **Problem solving and sequential thinking** i.e. being able to find simple cause and effect relationships, doing jig-saw puzzles, being able to relate parts of an object to the whole object, and so on.

While some activities can be planned through graded play activities in a number readiness programme, the teacher can utilise opportunities that come up naturally during the course of the day to reinforce any of the above concepts or skills. Some children need to repeat an activity several times before they have mastered a skill or concept. The programme therefore needs to be flexible, relaxed and enjoyable - an environment where a teacher can enjoy each little child step into the world of mathematics. Where the teacher does not 'teach' a 'correct method' of doing mathematics sums, but allows children to develop their own methods and learn from their peers. Children are not afraid to make mistakes in such a class, since the emphasis is not on correct answers or methods, but on the process of arriving at these. The errors that children make are viewed as a natural part of this process and help the teacher to gain insight into the functioning of the child's mind. They help the teacher to plan suitable experiences to enhance the child's understanding. It is important that children learn that there are different ways of looking at the same problem. They need to learn from each other and see which way is the most effective. They can only do this if they are allowed to experiment fearlessly and feel the excitement of making their own discoveries, of experiencing active learning. Unless children arrive at their own understandings, and are not afraid to make mistakes - we will continue to have the dread and the confusions that exist in our maths classrooms.

THE GAME PAGE!!!- PLAY IT

Its' going to be vacation time. A variety of games needed may enhance the quality of the holidays.

1. APRIL FOOLS' GAME:

Every child is given a card, with an instruction written on it. It would be an April Fool's trick that they must play on someone before the day in the school is over! For e.g. One card may say, 'Tell someone that "there's someone from the office calling him", or "his shirt buttons are opened". If that child falls for it (say, goes to see who the person is, or looks at his shirt buttons), then that person has been officially fooled. The idea is to avoid being fooled but to fool as many others as possible. At the end of the day, the teacher could check how many were fooled, and which child fooled the most.

P.N.: This apparently is a very common game which all children play on the 1st of April. Yet, this game, if brought into the classroom by the teacher, in a structured fashion, there are immense possibilities for reducing the unwanted pranks, unreasonable instructions and increasing the joys and explosions in the classrooms, as a result of their need being satisfied.

2. CAPTIVE

This game would require two teams. We would need two leaders, who would divide the class into two teams. Each team represents a kingdom. In each kingdom, everyone will be loyal subjects, except for one who will secretly be a spy for the opposing enemy kingdom.

Then the two kingdoms move into separate rooms, where they cannot be heard by the enemy kingdom. There each must choose a king who will be unknown by the enemies. After choosing a king, a spy will also be chosen from among the other members of the country by a secret drawing of cards, so the members will not know

which one is the enemy spy. To choose the spy each leader has all the members of one country, except the king, draw slips of paper from a bowl, look at it, and then give it to the leader to see. All slips, except one, will have 'Loyal' written on them; the one other slips will read 'Spy.'

While the kingdoms are still separated, the two leaders switch rooms and tell each kingdom the name of their spy on the other team but not the name of the other kingdom king. Then the two kingdoms are brought into the same room. The objective is for each kingdom to find out from their spy who the other kingdom's king is and to make him a captive. Holding a captive is done by stabbing the enemy with one's finger - in his back only (or whatever method you choose). If they mistakenly catch someone who is not the king, they lose the game.

Each team knows their spy, but they do not know which of their own members is the enemy spy. If they can find him, they can make him a captive. However if they catch one of their loyal members, they lose the game.

3. WHATS' COOKING ?

Copy the ingredients of a few common food items, like ketchup, butter, jam, maggi noodles, bread, etc. Pass this list out to you group of children, and have them guess what each item is.

For e.g. :- 1. Tomatoes, sugar, acetic acid, salt, onion, preservative, spice extract and garlic (Tomato ketchup).
2. Partly skinned milk and sucrose (Everyday whitener).

4. HELP THY NEIGHBOUR

Here's a simple card game that everyone likes to play. You need a minimum of four people to play, and there is no maximum. If you have lots of kids, get lots of games going at once. You will need one deck of regular playing cards (or some other kind of numbered cards) for every four people who play.

Everyone gets one suit (hearts,

spades, etc.), numbers two through twelve (Jack is eleven and Queen is twelve). The King and the Ace are not used. The cards should be spread out face up in front of each person.

The first player (it doesn't matter who starts) takes a pair of dice & rolls them. Whatever number is rolled, the player then turns over the corresponding card. For example, if the dice total comes

to seven, then the player turns over his number seven card.

The player keeps rolling as long as he has cards to turn over. He can, however, turn over the cards of the player to his left to keep his turn alive - "help thy neighbour." His turn continues until he can no longer turn over any cards from either his hand or his neighbours. The game ends when a player has turned over all of his cards.

EFFECTIVENESS OF CO-OPERATIVE LEARNING IN TEACHING ECONOMICS

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Cooperative learning strategies in the classrooms from Class I to Class XII have immense advantages and possibilities to help children learn and grow. These strategies are so structured that students are required to work together in groups to achieve the shared academic goal. This makes students accountable for their achievement, in addition to their contribution in the performance of the other group members.

Here is an attempt to study the effectiveness of cooperative learning in Teaching Economics at the Higher Secondary Level.

This study concerned itself mainly at finding out the impact on the students by adopting cooperative learning methods in classroom teaching in comparison to the conventional method of teaching i.e., lecture cum discussion method.

Eight sessions using cooperative learning methods were held to cover the content of three chapter - namely, 'Price Rise', 'Unemployment' and 'Poverty' on the class XI students of St. Mary's School New Delhi including two handicapped children was taken as the sample for study. First five sessions basically followed the same format of making 6-7 member heterogenous groups on the basis of random sampling, (each session called for new

groups to be formed) followed by distribution on activity sheets and discussion material to each student. After individual reading and reflection, group discussions followed to achieve the outlined objectives. Group leaders of each group would present reports and healthy intergroup interaction was encouraged during the sessional debriefing. The sessions concluded by each students filling in a daily evaluation sheet. Students responses regarding content, material, process and outcome were classified into positive, negative and neutral statements and the results tabulated for each session.

Session VI, VII and VIII allowed for preliminary sharing in pairs followed by group formation. While session VI and VII held written quizzes, session VIII called for a oral quiz amongst the groups.

Session IV and V were interrupted by a class taken in convention method (lecture cum discussion) and the evaluation sheets were filled in by each student.

Some of the major findings were :-

1. The sessions held by using cooperative learning methods, its gradual withdrawal and substitution by conventional method of teaching and

reinduction of the cooperative learning methods in the latter four sessions - provide indicators for effectiveness of cooperative learning methods. The rise and fall in the positive and negative effect statements expressed by the students in evaluation of each session reflects the trend. The qualitative analysis also indicates that the effect of this process is reflected in students efforts towards content, material and outcome.

The responses also convey students' preference for class work discussion material and exercises rather than for lengthy materials assigned for home reading. Working in pairs enthused greater spirit in the students and quizzing generated active student participation from all the team members than in the case when group leaders presented reports.

Students interest in activities is sustained by presenting variations in the task cum incentive structure and a continuous spell of any one specific structure would create monotony and effect the outcome considerably.

2. Apart from academic achievement significant observations were made regarding the socio-emotional consequences of cooperative learning methods.

It was observed by the researcher that during the course of cooperative learning, students believed they were valuable and important to their group - and this did wonders to pep up their confidence. As a result of contact with others in the class increased and mutual help led to mutual liking.

Because of the social nature of the task, cooperative learning increased time on task by engaging students' attention and thus increased their motivation to master academic materials. Formation of random groups increased student interaction in the class.

Listening, talking, sharing, increased cooperation in the class and

developed altruistic tendencies amongst the students. This increased their ability to understand other students' perspective in the class. It also developed communication skills, leadership qualities, trust, decision making and conflict managements skills of the student.

One remarkable change was observed in the students' attitudes towards their handicapped classmates. The students and the researcher were totally taken a back when 'X' a handicapped girl - was appointed group leader - presented her report very confidently and systematically. Group members were also seen lending their ears patiently to comprehend what 'Z' a student who had speech distortion was trying to say. This clearly brought to light growing acceptance of handicapped children by the 'normal' students in the classroom and vice versa.

Because cooperative learning sessions were social, engaging and fun, it was clearly visible that the students enjoyed working with each other, liked learning co-operatively and were ready participants for any such session with great enthusiasm.

3. Cooperative learning methods generated a lively atmosphere in the class and won instant approval from the students.

From the point of view of teacher, though it may have apparently saved her breath in the class - cooperative learning methods entailed massive efforts in planning, designing material, implementation and class management. Thus one may conclude that cooperative learning methods demand a lot from the teacher and requires best of abilities in framing appropriate activities and discussion materials to suit the needs of the students, the content to be covered and duration of time available - without which the methods could fail to achieve the desired outcomes.

THE JOY OF CREATING THINGS

I. The wonder of **CRAYON TRANSFER** :-

Materials needed :- crayons, two sheets of paper, pencil, for each child.

Procedure :-

1. A sheet of paper is filled with different crayon colours, pressing down heavily (1). This'd be the transfer sheet.
2. This transfer sheet is now placed on a clean sheet, face down.



(fig.1)



(fig.3)

3. On the back of the transfers sheet, the child can be asked to draw any picture, using a pencil, pressing heavily. (3).
4. Separate the two sheets carefully and we'll find the multicoloured image of the drawing on the clean sheet.

NO CREATION TAKES PLACE IN A VACUUM !!

II. Possibilities with **PAPER-MACHE** :-

Paper Mache Bird :-

Materials needed :- newspapers, glue, coloured sheets of newspaper, scissors, paint, brushes, tape.

Procedure :-

1. Crumple the newspaper well into two balls - one large for the body and a smaller one for the head.
2. The two balls are glued together well. When dry, tape the two balls, together firmly.
3. Out of a half sheet of newspaper, make a small cone of 3" length and stick it well, for the beak. This beak is taped to the head.
4. Bits of newspapers are crumpled well for the eyes and stick on to the beak.
5. The colored sheets of newspapers are stripped to about 5" length and 1" wide.
6. Cover up the bird well with these strips using glue.
7. Set the bird aside to dry well, and then paint it to the desired colour.

A successful teacher told me what had turned the tide for him when he was doing poorly. It was a picture of a boat stuck in the sand, with the tide out. The title of that picture was "The Tide Always comes back. Don't ever accept defeat. Never even think, "I can't." Instead say to yourself, The tide always comes back. It will, if you will it so."

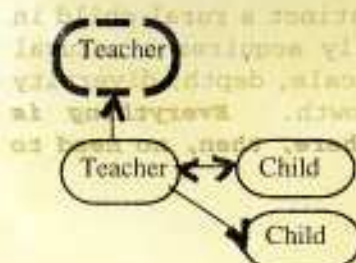
Class/Group
Behaviour

1 - 2 - 3 - 4 - 5 - 6 - 7
Never Always

Class/Group
Behaviour

1. I offer facts, give my opinions and ideas, provide suggestions and relevant information to help any group discussion in my class;
2. I express my willingness to cooperate with the class and my expectations that they will also be cooperative;
3. I am open in my dealings with the children;
4. I give support to children who are struggling to express themselves intellectually or emotionally or kinesthetically;
5. I keep my thoughts, ideas, feelings and reactions to myself during free conversation and structured discussions;
6. I evaluate the work and contributions of all children/teachers in terms of whether they are right or wrong;
7. I take risks in expressing my new ideas and practicing current teaching techniques;
8. I communicate to my class that I am aware of, and appreciate their abilities, talents, capabilities, skills and resources;
9. I offer genuine help and assistance to any child/colleague in order to bring up the performance of everyone;
10. I genuinely accept and support the openness of all children, supporting them for taking risks and encouraging individuality in group members;
11. I share any materials, books, sources of information, or other resources I have with the other teachers in order to promote the success of individual members and the group as a whole;
12. I often summarise what others have said before I respond or comment;
13. I level with my children/colleague teachers well;
14. I warmly encourage my children to participate, giving them genuine recognition for their contributions, demonstrating acceptance and openness to their ideas and generally being friendly and responsive to them;

(Adapted from: Reaching Out - Frank, Helen, et al. 1972, P.61.)



Most of the time, the teacher looks down on the child. Such a relationship nurtures "authority" and "resentment". When the teacher allows for a judicious and meaningful disclosure and makes herself transparent, the relationship becomes equal and as a result nurtures love, and trust, and automatically elevates the teachers' status and authority in a conducive way.

I am afraid to tell you, who I am, because, if I tell you who I am, you may not like who I am, and it's all that I have...

John Powell.

HAIL ! INTERDEPENDENCE !!

Victor Anant
UNICEF News

Everything is Interlinked

All the abiding influences of my life (I now realize) belong to my childhood. I was one of an extended family of about twenty children, several uncles and aunts, three grandparents who were then alive, sharing an ancestral home in a traditional, agricultural village in Kerala, South India.

Those early years were earth-bound, shaped by love, a sense of godliness, respect for our elders and trust in our whole cycle of relationship. It was a complete environment, self-contained. We bathed in the river, ate off banana leaves, walked to school, climbed mango trees, played games with pieces of string and dice, and rang the temple bells. Grandmother healed our bruises with turmeric paste, cured an earache with a few drops of sesame (til) oil warmed with cloves and pepper.

This early education was considered the foundation of our "learning". We were allowed to learn, **we were taught through the medium of things around us. There were no short cuts.** A specific example of this is the way in which I learned to read and write.

My initiation into the alphabet was a huge village celebration. In the sand courtyard, rice was heaped, mixed with colourful petals. My hand was guided to draw the first letter. Everyone clapped, then we feasted. The next stage was learning to read the scriptures engraved on dried coconut leaves. After which I got

my first slate, on which I could write and draw and learn simple sums. Naturally, I stumbled as most children do, made more mistakes than advances. But mistakes were easily wiped off with a damp cloth. Nobody laughed.

In the same way we were taught that everything had its use, nothing was wasted. Modernisers often refer to the "dung" culture of Indian villages. This dung, however, was not so much sacred as it was simply the cheapest and most easily available natural resource which had a variety of everyday uses. It was used to wash the floor - because it has the quality of a natural disinfectant. It was gathered as manure for our vegetables - direct evidence of what is now fashionably called "recycling". Dung was dried and used for fuel. The peasants used it to stop leaks in their thatched huts.

There are positive, and profoundly lasting lessons to be drawn from the first-hand experiences of four of five years of early childhood in a rural environment, slowly absorbing the rhythms and tempo of the world around us. **A child becomes aware, gradually, of a whole community of shared experiences - not just an immediate family web.** Several generations participate in the pleasures of its own growth.

Almost by instinct a rural child in a traditional family acquires a natural perception of the scale, depth, diversity and limits of growth. **Everything is interlinked, Is there, then, no need to change ?**

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